In the Claims:

Please cancel claims 1-24 without prejudice or disclaimer of the subject matter therein and enter the following new claims:

-- 25. An isolated polynucleotide segment comprising: a first polynucleotide sequence, or the full complement of the entire length of the first polynucleotide sequence, wherein the first polynucleotide sequence is selected from the group consisting of:

(a) a polynucleotide consisting of SEQ ID NO:1; and,

(b) a nucleic acid sequence identical to the polynucleotide of (a) except that, over the entire length corresponding to the polynucleotide of (a), up to **five** nucleotides are substituted, deleted or inserted for every 100 nucleotides of the polynucleotide of (a).

-- 26. A vector comprising the isolated polynucleotide segment of claim 25.

-- 27. An isolated polynucleotide segment comprising the vector of claim 26.

-- 28. The isolated polynucleotide segment of claim 25, wherein the first polynucleotide sequence is selected from the group consisting of: the polynucleotide of (a); and, a nucleic acid sequence identical to the polynucleotide of (a) except that, over the entire length corresponding to the polynucleotide of (a), up to **three** nucleotides are substituted, deleted or inserted for every 100 nucleotides of the polynucleotide of (a).

-- 29. The isolated polynucleotide segment of claim 25, wherein the first polynucleotide sequence is the polynucleotide of (a).

-- 30. An isolated polynucleotide segment, comprising a first polynucleotide sequence, or the full complement of the entire length of the first polynucleotide sequence, wherein the first polynucleotide sequence is selected from the group consisting of

(a) a polynucleotide which encodes the same mature polypeptide, expressed by the histidine kinase gene expressed by a nucleotide sequence comprising SEQ ID NO:1 contained in *Staphylococcus aureus* WCUH 29 contained in NCIMB Deposit No. 40771; and,

(b) a nucleic acid sequence identical to the polynucleotide of (a) except that, over the entire length corresponding to the polynucleotide of (a), up to **five** nucleotides are substituted, deleted or inserted for every 100 nucleotides of the polynucleotide of (a).

-- 31. The isolated polynucleotide segment of claim 30, wherein the first polynucleotide sequence is selected from the group consisting of: the polynucleotide of (a); and, a nucleic acid sequence identical to the polynucleotide of (a) except that, over the entire length corresponding to the polynucleotide of (a), up to **three** nucleotides are substituted, deleted or inserted for every 100 nucleotides of the polynucleotide of (a).

-- 32. The isolated polynucleotide segment of claim 30, wherein the first polynucleotide sequence is the polynucleotide of (a).

-- 33. A polynucleotide which encodes a fusion polypeptide and which includes the isolated polynucleotide segment according to claim 32.

-- 34. An isolated polynucleotide segment, comprising a first polynucleotide sequence or the full complement of the entire length of the first polynucleotide sequence, wherein the first polynucleotide sequence hybridizes to the full complement of SEQ ID NO:1, wherein the hybridization conditions include incubation at 42°C in a solution comprising: 50% formamide, 5x SSC (150mM NaCl, 15mM trisodium citrate), 50 mM sodium phosphate (pH7.6), 5x Denhardt's solution, 10% dextran sulfate, and 20 micrograms/ml denatured, sheared salmon sperm DNA, followed by washing in 0.1x SSC at about 65°C.

-- 35. The isolated polynucleotide segment of claim 34, wherein the first polynucleotide sequence is identical to SEQ ID NO:1 except that, over the entire length corresponding to SEQ

ID NO:1, up to **five** nucleotides are substituted, deleted or inserted for every 100 nucleotides of SEQ ID NO: 1.

-- 36. The isolated polynucleotide segment of claim 34, wherein the first polynucleotide sequence is identical to SEQ ID NO:1 except that, over the entire length corresponding to SEQ ID NO:1, up to **three** nucleotides are substituted, deleted or inserted for every 100 nucleotides of SEQ ID NO: 1.

-- 37. An isolated polynucleotide segment, comprising a first polynucleotide sequence or the full complement of the entire length of the first polynucleotide sequence, wherein the first polynucleotide sequence is selected from the group consisting of:

(a) a polynucleotide which encodes a polypeptide comprising the amino acid sequence set forth in SEQ ID NO:2; and,

(b) a nucleic acid sequence identical to the polynucleotide of (a) except that, over the entire length corresponding to the polynucleotide of (a), up to **five** nucleotides are substituted, deleted or inserted for every 100 nucleotides of the polynucleotide of (a).

-- 38. A vector comprising the isolated polynucleotide segment of Claim 37.

-- 39. An isolated host cell comprising the vector of claim 38.

-- 40. The isolated polynucleotide segment of claim 37, wherein the first polynucleotide sequence is the polynucleotide of (a).

-- 41. A vector comprising the isolated polynucleotide of claim 40.

-- 42. An isolated host cell comprising the vector of claim 41.

-- 43. A process for producing the polypeptide, comprising the step of culturing the host cell of claim 42 under conditions sufficient for the production of the polypeptide, wherein the isolated polynucleotide segment comprises the first polynucleotide sequence.

-- 44. The isolated polynucleotide segment of claim 40, wherein the polypeptide encoded by the first polynucleotide sequence consists of the amino acid sequence set forth in SEQ ID NO:2.

-- 45. A vector comprising the isolated polynucleotide segment of claim 44.

-- 46. An isolated host cell comprising the vector of claim 45.

-- 47. A process for producing the polypeptide, comprising the step of culturing the host cell of claim 46 under conditions sufficient for the production of the polypeptide, wherein the isolated polynucleotide segment comprises the first polynucleotide sequence.

-- 48. An isolated polynucleotide segment, comprising a first polynucleotide sequence or the full complement of the entire length of the first polynucleotide sequence, wherein the first polynucleotide sequence encodes a polypeptide comprising the amino acid sequence set forth in SEQ ID NO:4.

-- 49. A vector comprising the isolated polynucleotide segment of Claim 48.

-- 50. An isolated host cell comprising the vector of claim 49.

-- 51. The isolated polynucleotide segment of claim 48, wherein the first polynucleotide sequence consists of the polynucleotide sequence set forth in SEQ ID NO:3.

-- 52. A process for producing a polypeptide, comprising the step of culturing the host cell of claim 50 under conditions sufficient for the production of the polypeptide, wherein the isolated polynucleotide segment comprises the first polynucleotide sequence.

-- 53. The isolated polynucleotide segment of claim 48, wherein the first polynucleotide sequence encodes a polypeptide consisting of the amino acid sequence set forth in SEQ ID NO:4.

-- 54. A vector comprising the isolated polynucleotide segment of claim 53.

-- 55. An isolated host cell comprising the vector of claim 54.

-- 56. A process for producing the polypeptide, comprising the step of culturing the host cell of claim 55 under conditions sufficient for the production of the polypeptide, wherein the isolated polynucleotide segment comprises the first polynucleotide sequence.

-- 57. An isolated polynucleotide segment comprising a portion of SEQ ID NO:1, wherein the portion comprises at least 30 contiguous bases.

-- 58. The isolated polynucleotide segment of claim 57, wherein the portion comprises at least 50 contiguous bases. --